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lic health, a further donation of £1,063 for the same object had been intimated from Mrs. Bruce and other members of the family. It was also reported that an offer of £5,000 towards the same object had been received since last meeting of the Court from a gentleman whose name, at his own request, is not to be made known for the present. The Court, considering that the amount of donations approximates the sum which they think to be necessary for the endowment of the proposed chair, resolved to request the Universities' Commission to frame a draft ordinance instituting a separate chair of public health in the University.

DR. OTTO FISCHER, professor of chemistry at the University at Erlangen, has been called to Kiel; Dr. W. Felix has been promoted to an associate professorship of anatomy at the University of Zurich. Dr. August Pauly has been made associate professor of comparative zoology at the University of Munich and director of the division of zoology at the forestry experiment station. Professor Pasquele Baccarini has been appointed professor of botany at the University of Catania and Dr. Oswald Kruch professor at the agricultural experiment station in Perugia.

#### DISCUSSION AND CORRESPONDENCE.

##### OPPORTUNITIES FOR TRAINING IN PHYSIOLOGY.

THE department of physiology in the Harvard Medical School offers to four qualified men positions in which training in physiology may be obtained.

It is expected that these men will give the mornings of the collegiate year to research and the afternoons to the direction of undergraduate students in experimental physiology, under the supervision of a professor in the department. Every effort will be made to instruct the holders of these positions in the ways of framing problems for investigation, in the principles of criticism, in the technical methods of research, and in the manner in which the results of an investigation should be put together for publication. Instruction will be given also in methods of teaching, including the arrangement of lectures, the division of subject-matter between the systematic course covering the entire field and the advanced special lectures,

the physiological conference, the Journal Club, the use of the projection lantern in physiological demonstration, and the demonstration of physiological experiments to large and small classes.

The direction of laboratory work will be an important part of the training. The first year class in the Harvard Medical School is divided into sections of thirty-two. Each section works twenty-four afternoons in experimental physiology, making more than one hundred experiments, such as the influence of temperature on the form of the muscle curve, the phenomena of electrotonus, the compensatory pause of the heart, the use of the artificial eye, the ophthalmoscope, laryngoscope, sphygmograph, etc. etc. The repetition of fundamental experiments in this course, and the great variety afforded by so many experimenters working at the same time, secure to the directors of the work a thoroughness and a breadth of training in elementary physiology scarcely attainable in other ways.

The administration of a large department will be carefully explained. Attention will be given to the cost of apparatus for instruction and research, the problems of construction and maintenance of plant, the care of storage batteries, the making of lantern slides, the cataloguing of physiological literature, the importation of apparatus, and many other details essential to the successful operation of a physiological laboratory. Men intending to devote themselves to clinical medicine, will, of course, give less time to these things and will concern themselves chiefly with matters bearing directly on their chosen work.

It is evident that these appointments will afford an admirable training to those intending to make physiology or any other of the biological sciences a profession. To the physician they offer a training not less valuable in the opinion of those who believe that research in the fundamental sciences is the best introduction to the higher walks of medicine.

Applicants for these positions should possess an elementary knowledge of physiology and a sufficient training in one or more of the biological sciences to enable them to profit by the instruction offered. Successful applicants are

required to take twelve half-days' instruction in the details of the course in experimental physiology, before October 1st of their year of service.

No charge of any kind will be made for the year's training.

The Harvard Medical School will give successful applicants the title of 'Assistant in Physiology,' and for the direction of the classes in experimental physiology will pay each Assistant four hundred dollars.

Applications may be sent to

PROFESSOR H. P. BOWDITCH.

HARVARD MEDICAL SCHOOL, BOSTON, MASS.

#### NOTE ON NATRIX GROHAMII B. & G.

IN Professor O. P. Hays' report on the Batrachians and Reptiles of Indiana\* he says, on p. 589, "The young are no doubt brought forth alive and active." There is now no question about the fact of their being viviparous, as several were born alive in the Chicago Academy of Sciences, July 29th.

The adult female, measuring 775 mm. in length, was collected at Glenn Ellyn, Illinois, on July 25th, by Mr. Frank M. Woodruff, and its extreme size was particularly noted; four days later it gave birth to eight young, which were alive and very active. The births took place some time during the night, and the young were noticed on the following morning a little after 7 o'clock. They were at that time fully active and resembled somewhat the parent, although differing in some of the color markings. The young measured 246 mm. in length and were colored as follows: Back 'slaty-blue with two very dark dorsal stripes; a dark stripe borders the edge of the blue dorsal surface and separates it from the yellowish lateral surface; this is in turn separated from the greenish-yellow ventral surface by a black stripe, which follows the edges of the plates in a zigzag manner and disappears on the side of the head.

The young were kept alive for several weeks and finally preserved, with the parent, in the Academy's collection (Mus. No. 10,337 adult; 10,335 young). As another point of interest we might mention that a specimen of the Western Bull Snake (*Pitnophis sayi* Schleg), measur-

\* Indiana. Department of Geology and Natural Resources, 17th Annual Report, 1891.

ing nine feet in length, laid twenty-two eggs in captivity during the first week in August. The female was in the same cage with a small male for about two months previous to the laying, and it is probable that copulation took place during captivity.

FRANK C. BAKER,

FRANK M. WOODRUFF.

#### PSEUDO-AURORA AGAIN.

IN SCIENCE, First Series, for December 2 and 16, 1892, there was a short discussion of this subject, and now appears a still longer letter on the same subject in SCIENCE for January 29, 1897. It seems a little strange that so simple a phenomenon should give rise to so diverse views, and yet when we consider how many views have been given of a precisely similar phenomenon, 'The Brooken Spectre,' it is not so surprising. It is probable that this latest description is given from memory and not from notes made at the time—an exceedingly important proceeding if one would keep from falling into grievous errors. Every electric arc light has a support at the top, and this would absolutely prevent any column of pure white light being projected toward the zenith. More than this, if these assumed horizontal planes of ice reflected the light it seems impossible to consider that the reflections would be only from a region directly above the lamp.

If one will turn to the description in SCIENCE, December 2, 1892, he will see how it is almost exactly contrary to this later one, and yet the former undoubtedly presents a better idea of the phenomenon. When the air is full of frost particles or fog any object standing before a light will cast a shadow into the mass of frost particles or fog. If one will stand underneath an arc light when the air has fog in it he will see what appears like a beam projected into the fog. The same may also be seen when any foot rest or projecting arm intercepts the light; in this case a horizontal beam will be seen passing into the fog. Just at sunset if one stands upon a broad plain with his back to the sun he will see his shadow cast upon the ground and extending more than 100 feet to the eastward. Now imagine the surface on which the shadows cast to be practically on all sides like fog; then